REMARKS

In the Office Action mailed December 12, 2008, the Examiner rejected all pending claims 1, 4-27, 30, and 31. In view of the following remarks, Applicants respectfully request reconsideration and allowance of all pending claims.

Claim Rejections under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1 and 4-27 under 35 U.S.C. § 103(a) as obvious over the combination of Pieper et al. (U.S. Patent No. 5,825,908) and Wang et al. (U.S. Patent Publication No. US2003/0212327). Applicants respectfully traverse these rejections.

Legal Precedent

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). To establish a *prima facie* case, the Examiner must show that the combination includes *all* of the claimed elements, *and* also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). Further, the Supreme Court has recently stated that the obviousness analysis should be explicit. *See KSR Int'l Co. v. Teleflex, Inc.*, 82 U.S.P.Q.2d 1385 (U.S. 2007) ("[R]ejections based on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.") (quoting *In re Kahn*, 441 F.3d 977,988 (Fed. Cir. 2006)).

Further, during patent examination, the pending claims must be given an interpretation that is <u>reasonable</u> and <u>consistent</u> with the specification. *See In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969); *see also* M.P.E.P. §§ 608.01(o) and 2111. Indeed, the <u>specification</u> is "the primary basis for construing the claims." *See Phillips v. AWH*

Corp., 75 U.S.P.Q.2d 1321, 1326 (Fed. Cir. 2005). One should rely <u>heavily</u> on the <u>written</u> <u>description</u> for guidance as to the meaning of the claims. *See id.*

Brief Summary of Present Application

In accordance with embodiments of the present technique, a navigational tool may be provided for selection of images in a series of images. *See* Specification, ¶ [0007]. For example, in medical imaging, a large number of images (e.g., hundreds or thousands of images) may be acquired in a single imaging session or in multiple imaging sessions over time. *See* ¶¶ [0002]-[0004]. Cine mode viewing of these images may be excessively time-consuming. *See* ¶ [0005].

A navigational tool in accordance with embodiments of the present technique may include a scout tool which illustrates the amount of change from one image to the next. *See* Specification, ¶ [0041]. The amount of change may be represented by a difference index, which may be computed using various mathematical techniques. *See* ¶ [0042]. The scout tool may be illustrated as a graph in which the difference index between consecutive (e.g., spatially or chronologically adjacent) pairs of images is charted. *See* ¶ [0045]; FIG. 6. A caregiver may use the scout image to determine which images show the most relative variance, which may indicate an anomaly in the images. *See* ¶ [0038]. Furthermore, the caregiver may access the images of interest by using a virtual tool to move directly to the images corresponding to the desired relative variance. *See* ¶ [0045]. The tool may facilitate rapidly locating images of interest in a series of thousands of images, for example. *See* pages 2, 3, and 13.

Deficiencies of the Rejection

Accordingly, independent claim 1 recites, *inter alia*, "<u>calculating a level of change</u> of the image data from one image to the next in the plurality of images; and presenting a viewer with the <u>calculated levels of change</u> of the image data for the plurality of images." (Emphasis added). Similarly, independent claim 9 recites, *inter alia*, "generating a scout navigation tool by <u>quantifying a level of change</u> of the image data from one reconstructed image to the next in the plurality of reconstructed images, the scout navigation tool including a <u>graphical representation of</u>

progressive change between reconstructed images of the plurality of reconstructed images and a virtual tool for navigating through the plurality of reconstructed images based upon the level of change." (Emphasis added). Independent claim 20 recites, *inter alia*, "processing circuitry configured to compare image data representative of a plurality of images acquired via a medical imaging system and not as video, and to generate a scout navigation tool by computing a level of change of the image data from one image to the next in the plurality of images, the scout navigation tool including a graphical representation of progressive change between images of the plurality of images and a virtual tool for navigating through the plurality of images based upon the level of change." (Emphasis added). The remaining independent claims 24-27 recite similar features.

In contrast, the cited combination does not disclose these features. For example, the Pieper reference discloses a system for scrolling through a series of images and switching between axial, coronal, and sagittal views of an imaged object. Rather than teaching the claimed method for processing image data, the Pieper reference is an example of the extremely time-consuming image review method which the present technique aims to avoid or improve. Specifically, the Pieper reference provides a system for scrolling through images in three dimensions but does not provide any reference for determining which images may be of most interest to a caregiver. *See, e.g.,* Pieper, col. 13, lines 12-22. Moreover, the Examiner's apparent assertion that scrolling through a series of images is equivalent to generating a graphical representation of the level of change between the images cannot be sustained.

The Examiner stated that "Pieper does not explicitly disclose calculating a level of change of the imaged data from one image to the next." Office Action, page 4 (emphasis in original). However, the Examiner then argues incorrectly that merely reconstructing a slice image constitutes "an indicia presented to the user indicating calculated levels of change." Office Action, page 4. Applicants respectfully stress that this argument cannot be sustained. The suggestion that forming a reconstructed image from individual slices constitutes calculating a change between that ultimately reconstructed image and other reconstructed images does not hold. Moreover, the Examiner is apparently misinterpreting the claims in asserting that Pieper teaches

calculated levels of change, especially in view of the plain language of claims and in view of the present specification.

The Examiner relied on the secondary reference (Wang) to allegedly teach "an explicit calculation of change levels and presentation of calculated change levels between each slice." *See id.* Applicants respectfully disagrees. Instead, Wang discloses calculating/displaying a distribution of pixel values (e.g., darkness) for a pixel column in a thick-slice region. The reference focuses, for example, on inverting dark areas to better detect lesions. *See, e.g.*, Wang, page 8, ¶ 72. Wang does not compare adjacent images, as claimed. But, again, the Examiner asserted confusingly that an image slice is "interpreted as a graphical representation of progressive change." Office Action, page 8. As indicated, the Examiner seems to be arguing that: (1) reconstructing slices to form a 3D image; and/or (2) showing two different images in succession, that either of these constitutes calculating or characterizing the differences between those images.

In addition, it should be emphasized that claim 9 recites quantifying and graphically presenting a level of change between reconstructed images (not slices). Claim 9 and its dependent claims are believed patentable over the cited references for this additional reason.

Lastly, as Applicants have repeatedly stressed in previous Responses, independent claims 24 and 25 include means-plus-function language, as set forth in 35 U.S.C. § 112, paragraph 6, and should be examined in accordance with this body of law. As may be appreciated, with respect to 35 U.S.C. § 112, paragraph 6, an Examiner "may not disregard the structure disclosed in the specification corresponding to such language when rendering a patentability determination." *In re Donaldson Co.*, 29 U.S.P.Q.2d 1845 (Fed. Cir. 1994); *see also* M.P.E.P. § 2181. Applicants respectfully note that the present rejection does not comport with the controlling case law or M.P.E.P. sections and is, therefore, deficient. Accordingly, the Examiner has failed to establish a *prima facie* case of unpatentability in accordance with the relevant statutory and precedential authority outlined above.

In view of the foregoing, Applicants believe all claims to be patentable over the cited combination of Pieper and Wang, whether or not the references are take alone or in combination. It should be noted that the additional references (Golay and Geiser) cited in rejections of dependent claims do not obviate this deficiencies of Pieper and Wang. Accordingly, Applicants respectfully request the Examiner withdraw the rejections and allow all claims.

Dependent Claims

While the dependent claims are patentable because of their dependency on an allowable base claim, the dependent claims are also believed patentable by virtue of the subject matter they separately recite. For example, claims 7 and 8 recite a graphical representation and presenting the viewer with a virtual tool for navigating through the plurality of images based on progressive change between images. The tool facilitates rapidly locating images of interest in a series of thousands of images. *See* Specification, pages 2, 3, and 13. Claims 11-13 recite receiving inputs from a viewer via the scout navigation tool and displaying or storing or processing reconstructed images from the plurality of reconstructed images based upon the inputs. Claim 21 recites a user viewable display for displaying the scout navigation tool and images from the plurality of images based upon user inputs.

In contrast, the cited references are devoid of these features. Moreover, the Examiner is apparently ignoring legal precedent (i.e., the *Phillips* case discussed above) in incorrectly interpreting the present claims. The tool facilitates rapidly locating images of interest in a series of thousands of images. *See* Specification, pages 2, 3, and 13.

Another example is dependent claim 15, which recites wherein the plurality of reconstructed images represent a same subject of interest at different points in time. In contrast to claim 16, for example, claim 15 is directed to images of the same subject matter in different temporal settings. See Specification, pages 1 and 2; page 13, line 19 – page 14, line 9; Figure 5. For the additional reasons, Applicants respectfully request the Examiner withdraw the rejections of the dependent claims.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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